



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

with the condition $(ad-bc)^2=1$; for, considering the group G :

$$\begin{aligned}x_1' &= a^2x_1 + 2abx_2 + b^2x_3, \\x_2' &= acx_1 + (ad+bc)x_2 + bdx_3, \\x_3' &= c^2x_1 + 2cdx_2 + d^2x_3,\end{aligned}$$

it is easily seen that $x_2'^2 - x_1'x_3' = (ad-bc)^2(x_2^2 - x_1x_3)$.

But is $x_2^2 - x_1x_3 = 0$, the condition $(ad-bc)^2=1$ may be removed, thus obtaining a group of *four* parameters.

PROBLEMS FOR SOLUTION.

ALGEBRA.

205. Proposed by G. B.M. ZERR, A. M., Ph. D., Parsons, W. Va.

Express in the form of radicals the roots of the equation:

$$x^{15} + 15mx^{13} + 90m^2x^{11} + 275m^3x^9 + 450m^4x^7 + 378m^5x^5 + 140m^6x^3 + 15m^7x + 2r = 0.$$

206. Proposed by L. E. NEWCOMB, Los Gatos, Cal.

The product of a certain pair of roots of $x^4 + ax^3 + bx^2 + amx + m^2 = 0$, is equal to the product of the remaining pair.

207. Proposed by A. J. PAULSEN, San Francisco, Cal.

Solve $x^4 + y^4 = 2x^2y^2$; $x + y = a$.

GEOMETRY.

233. Proposed by S. F. NORRIS, Professor of Mathematics, Baltimore City College, Baltimore, Md.

If from any point on a circle circumscribed about a triangle perpendiculars are dropped to the sides of the triangle, the feet of these perpendiculars lie on a line. [Ashton's *Plane and Solid Analytic Geometry*, page 87, 11th example].

234. Proposed by M. E. GRABER, A. B., Instructor in Mathematics and Physics in Heidelberg University, Tiffin, Ohio.

Find the curve which is reciprocal to a circle and define it as a locus.

235. Proposed by W. J. GREENSTREET, A. M., Editor of The Mathematical Gazette, Stroud, England.

Any point on an ellipse is joined to the corners of an inscribed square. Find the anharmonic ratios of the pencil so formed.

CALCULUS.

181. Proposed by S. F. NORRIS, Baltimore, Md.

Integrate $dy = \frac{x^2 dx}{1 + x^4}$. [From Olney's *Integral Calculus*, page 116, third example, second part].